Technology 2003

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CATEGORY:	Simulation/Video/Imaging
PAPER TITLE:	The Trustworthy Digital Camera: Restoring Credibility To The Photographic Image

Abstract

The increasing sophistication of computers has made digital manipulation of photographic images incredibly easy to perform and, as time goes on, increasingly difficult to detect. The proposed device is a new type of digital camera whose output can be certified as being unretouched, and can restore the credibility that the photographic image once enjoyed. The Trustworthy Digital Camera employs public key encryption techniques at the system level, and produces an encrypted digital signature and a standard-format digital image file each time a picture is taken. Although digitally retouching or altering these image files would still be possible, doing so will cause a mismatch with the verifying signature, proving that the image is not an untouched original. Such a scheme is nearly impossible to counterfeit, and will help restore credibility and truth to photographic images (as well as other digitally- recorded artifacts, such as audio and video) and enhance their trustworthiness in critical applications, such as for courtroom evidence.